

AMENDMENTS TO THE CLAIMS:

The present listing of claims will replace all prior versions and listings of claims in the application.

Claims 1-81 (canceled).

Claim 82. (New) A peptide conjugate consisting of X and Z,

wherein X is a pharmacologically active peptide sequence, and

wherein Z is a stabilising peptide sequence of 4-20 amino acid units covalently bound by its N terminus to the C terminus end of X, wherein Z is $\text{Lys}_p\text{-Xaa}_q$ or $\text{Xaa}_p\text{-Lys}_q$, wherein p and q are integers in the range from 1 to 14, with the proviso that $p+q$ is in the range of 4-15, and each Xaa is Ser, Thr, Tyr, Asn, Gln, Asp, Glu, Arg, His, Orn, 2,4-diaminobutanoic acid, 2,3-diaminopropanoic acid or Met; or a salt thereof,

wherein,

X is selected from the group consisting of AF 12505 (Ile-Glu-Gly-Pro-Thr-Leu-Arg-Gln-Trp-Leu-Ala-Ala-Arg-Ala) (SEQ ID NO: 14), insulin-like growth factor I (57-70) (Ala-Leu-Leu-Glu-Thr-Tyr-Cys-Ala-Thr-Pro-Ala-Lys-Ser-Glu) (SEQ ID NO: 15), insulin-like growth factor I (30-41) (Gly-Tyr-Gly-Ser-Ser-Ser-Arg-Arg-Ala-Pro-Gln-Thr) (SEQ ID NO: 16), insulin-like growth factor I (24-41) (Tyr-Phe-Asn-Lys-Pro-Thr-Gly-Tyr-Gly-Ser-Ser-Ser-Arg-Arg-Ala-Pro-Gln-Thr) (SEQ ID NO: 17), insulin-like growth factor II (33-40) (Ser-Arg-Val-Ser-Arg-Arg-Ser-Arg) (SEQ ID NO: 18), insulin-like growth factor II (33-40) (Tyr-Ser-Arg-Val-Ser-Arg-Arg-Ser-Arg) (SEQ ID NO: 19), insulin-like growth factor II (69-84) (Asp-Val-Ser-Thr-Pro-Pro-Thr-Val-Leu-Pro-Asp-Asn-Phe-Pro-Arg-Tyr) (SEQ ID NO: 20), growth hormone (GH)-releasing peptide-6 (GHRP-6) (His-DTrp-Ala-Trp-DPhe-Lys-NH₂) (SEQ ID NO: 21), beta-Interleukin I (163-171) (Val-Gln-Gly-Glu-Glu-Ser-Asn-Asp-Lys) (SEQ ID NO: 22), beta-Interleukin II (44-56) (Ile-Leu-Asn-Gly-Ile-Asn-Asn-Tyr-Lys-Asn-Pro-Lys-Leu) (SEQ ID NO: 23), Interleukin II (60-70) (Leu-Thr-Phe-Lys-Phe-Tyr-Met-Pro-Lys-Lys-Ala) (SEQ ID NO: 24),

exendin-4 (GLP-1 analog) (His-Gly-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Leu-Ser-Lys-Gln-Met-Glu-Glu-Glu-Ala-Val-Arg-Leu-Phe-Ile-Glu-Trp-Leu-Lys-Asn-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH₂) (SEQ ID NO: 25), exendin-3 (GLP-1 analog) (His-Ser-Asp-Gly-Thr-Phe-Thr-Ser-Asp-Leu-Ser-Lys-Gln-Met-Glu-Glu-Glu-Ala-Val-Arg-Leu-Phe-Ile-Glu-Trp-Leu-Lys-Asn-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser) (SEQ ID NO: 26), epidermal growth factor (20-31) Cys(Acm)-Met-His-Ile-Glu-Ser-Leu-Asp-Ser-Tyr-Thr-Cys(Acm) (SEQ ID NO: 27), bivalirudin (Hirulog) (D-Phe-Pro-Arg-Pro-(Gly)₄-Asn-Gly-Asp-Phe-Glu-Glu-Ile-Pro-Glu-Glu-Tyr-Leu) (SEQ ID NO: 28), hirulog-1 D-Phe-Pro-Arg-Pro-(Gly)₄-Asn-Gly-Asp-Phe-Glu-Glu-Ile-Pro-Glu-Tyr-Leu (SEQ ID NO: 29), C-type natriuretic peptide (1-53) (CNP) (Asp-Leu-Arg-Val-Asp-Thr-Lys-Ser-Arg-Ala-Ala-Trp-Ala-Arg-Leu-Leu-Gln-Glu-His-Pro-Asn-Ala-Arg-Lys-Tyr-Lys-Gly-Ala-Asn-Lys-Lys-Gly-Leu-Ser-Lys-Gly-Cys-Phe-Gly-Leu-Lys-Leu-Asp-Arg-Ile-Gly-Ser-Met-Ser-Gly-Leu-Gly-Cys; Disulfide bridge: Cys37-Cys53) (SEQ ID NO: 30), "Mini ANP" (Met-Cys-His-cyclohexylAla-Gly-Gly-Arg-Met-Asp-Arg-Ile-Ser-Cys-Tyr-Arg, disulfide bridge cys2-cys13) (SEQ ID NO: 31), Melanotan-II (MT-II, alpha-MSH4-10-NH₂, or Ac-Nle4-Asp5-His6-D-Phe7-Arg8-Trp9-Lys10) (SEQ ID NO: 32), thymosin alpha1 (TA1) (Ac-Ser-Asp-Ala-Ala-Val-Asp-Thr-Ser-Ser-Glu-Ile-Thr-Thr-Lys-Asp-Leu-Lys-Glu-Lys-Lys-Glu-Val-Val-Glu-Glu-Ala-Glu-Asn) (SEQ ID NO: 33), Cys-Phe-Ile-Gln-Asn-Cys-Pro-Orn-Gly-NH₂, Disulfide bridge: Cys1-Cys6) (SEQ ID NO: 34), octreotide (201-995) (DPhe-Cys-Phe-DTrp-Lys-Thr-Cys-Thr-ol; disulfide bridge: Cys2-Cys7) (SEQ ID NO: 35), calcitonin gene-related peptide (CGRP) (Ala-Cys-Asp-Thr-Ala-Thr-Cys-Val-Thr-His-Arg-Leu-Ala-Gly-Leu-Leu-Ser-Arg-Ser-Gly-Gly-Val-Val-Lys-Asn-Asn-Phe-Val-Pro-Thr-Asn-Val-Gly-Ser-Lys-Ala-Phe-NH₂; Disulfide bridge: Cys2-Cys7) (SEQ ID NO: 36), endomorphin-1 Tyr-Pro-Trp-Phe-NH₂ (SEQ ID NO: 37); endomorphin-2 Tyr-Pro-Phe-Phe-NH₂ (SEQ ID NO: 38), nociceptin (also known as Orphanin FQ, Phe-Gly-Gly-Phe-Thr-Gly-Ala-Arg-Lys-Ser-Ala-Arg-Lys-Leu-Ala-Asn-Gln) (SEQ ID NO: 39), angiotensinogen (1-13) (Asp-Arg-Val-Tyr-Ile-His-Pro-Phe-His-Leu-Val-Ile-His) (SEQ ID NO: 40), adrenomedullin (1-12) (Tyr-Arg-Gln-Ser-Met-Asn-Asn-Phe-Gln-Gly-Leu-Arg) (SEQ ID NO: 41), antiarrhythmic peptide (AAP) (Gly-Pro-Hyp-Gly-Ala-Gly) (SEQ ID NO: 42), Antagonist G (Arg-DTrp-(nMe)Phe-DTrp-Leu-Met-NH₂), indolicidin (Ile-Leu-Pro-Trp-Lys-Trp-Pro-Trp-Trp-Pro-Trp-Arg-Arg-NH₂) (SEQ ID NO: 43), osteocalcin (37-49) (Gly-Phe-Gln-Glu-Ala-Tyr-Arg-Arg-Phe-Tyr-Gly-Pro-Val) (SEQ ID NO: 44), cortistatin 29 (1-13)

(Glp)-Glu-Arg-Pro-Pro-Leu-Gln-Gln-Pro-Pro-His-Arg-Asp) (SEQ ID NO: 45), cortistatin 14 Pro-Cys-Lys-Asn-Phe-Phe-Trp-Lys-Thr-Phe-Ser-Ser-Cys-Lys; Disulfide bridge: Cys2-Cys13 (SEQ ID NO: 46), PD-145065 (Ac-D-Bhg-Leu-Asp-Ile-Ile-Trp) (SEQ ID NO: 47), PD-142893 (Ac-D-Dip-Leu-Asp-Ile-Ile-Trp) (SEQ ID NO: 48), fibrinogen binding inhibitor peptide (His-His-Leu-Gly-Gly-Ala-Lys-Gln-Ala-Gly-Asp-Val) (SEQ ID NO: 49), leptin (93-105) (Asn-Val-Ile-Gln-Ile-Ser-Asn-Asp-Leu-Glu-Asn-Leu-Arg) (SEQ ID NO: 50), GR 83074 (Boc-Arg-Ala-DTrp-Phe-DPro-Pro-Nle-NH₂) (SEQ ID NO: 51) Tyr-W-MIF-1 (Tyr-Pro-Trp-Gly-NH₂) (SEQ ID NO: 52), parathyroid hormone related peptide (107-111) (Thr-Arg-Ser-Ala-Trp) (SEQ ID NO: 53), angiotensinogen (1-14) Asp-Arg-Val-Tyr-Ile-His-Pro-Phe-His-Leu-Val-Ile-His-Asn (SEQ ID NO: 54), and Leupeptin (Ac-Leu-Leu-Arg-CHO).

Claim 83. (New) A peptide conjugate comprising X and Z,

wherein X is a pharmacologically active peptide sequence, and

wherein Z is a stabilising peptide sequence of 4-20 amino acid units covalently bound by its N terminus to the C terminus end of X, wherein Z is Lys_p-Xaa_q or Xaa_p-Lys_q, wherein p and q are integers in the range from 1 to 14, with the proviso that p+q is in the range of 4-15, and each Xaa is Ser, Thr, Tyr, Asn, Gln, Asp, Glu, Arg, His, Orn, 2,4-diaminobutanoic acid, 2,3-diaminopropanoic acid or Met; or a salt thereof,

wherein,

X is selected from the group consisting of AF 12505 (Ile-Glu-Gly-Pro-Thr-Leu-Arg-Gln-Trp-Leu-Ala-Ala-Arg-Ala) (SEQ ID NO: 14), insulin-like growth factor I (57-70) (Ala-Leu-Leu-Glu-Thr-Tyr-Cys-Ala-Thr-Pro-Ala-Lys-Ser-Glu) (SEQ ID NO: 15), insulin-like growth factor I (30-41) (Gly-Tyr-Gly-Ser-Ser-Ser-Arg-Arg-Ala-Pro-Gln-Thr) (SEQ ID NO: 16), insulin-like growth factor I (24-41) (Tyr-Phe-Asn-Lys-Pro-Thr-Gly-Tyr-Gly-Ser-Ser-Ser-Arg-Arg-Ala-Pro-Gln-Thr) (SEQ ID NO: 17), insulin-like growth factor II (33-40) (Ser-Arg-Val-Ser-Arg-Arg-Ser-Arg) (SEQ ID NO: 18), insulin-like growth factor II (33-40) (Tyr-Ser-Arg-Val-Ser-Arg-Arg-Ser-Arg) (SEQ ID NO: 19), insulin-like growth factor II (69-84) (Asp-Val-Ser-Thr-Pro-Pro-Thr-Val-Leu-Pro-Asp-Asn-Phe-Pro-Arg-Tyr) (SEQ ID NO: 20), growth hormone (GH)-

releasing peptide-6 (GHRP-6) (His-DTrp-Ala-Trp-DPhe-Lys-NH₂) (SEQ ID NO: 21), beta-Interleukin I (163-171) (Val-Gln-Gly-Glu-Glu-Ser-Asn-Asp-Lys) (SEQ ID NO: 22), beta-Interleukin II (44-56) (Ile-Leu-Asn-Gly-Ile-Asn-Asn-Tyr-Lys-Asn-Pro-Lys-Leu) (SEQ ID NO: 23), Interleukin II (60-70) (Leu-Thr-Phe-Lys-Phe-Tyr-Met-Pro-Lys-Lys-Ala) (SEQ ID NO: 24), exendin-4 (GLP-1 analog) (His-Gly-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Leu-Ser-Lys-Gln-Met-Glu-Glu-Glu-Ala-Val-Arg-Leu-Phe-Ile-Glu-Trp-Leu-Lys-Asn-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH₂) (SEQ ID NO: 25), exendin-3 (GLP-1 analog) (His-Ser-Asp-Gly-Thr-Phe-Thr-Ser-Asp-Leu-Ser-Lys-Gln-Met-Glu-Glu-Glu-Ala-Val-Arg-Leu-Phe-Ile-Glu-Trp-Leu-Lys-Asn-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser) (SEQ ID NO: 26), epidermal growth factor (20-31) Cys(Acm)-Met-His-Ile-Glu-Ser-Leu-Asp-Ser-Tyr-Thr-Cys(Acm) (SEQ ID NO: 27), bivalirudin (Hirulog) (D-Phe-Pro-Arg-Pro-(Gly)₄-Asn-Gly-Asp-Phe-Glu-Glu-Ile-Pro-Glu-Glu-Tyr-Leu) (SEQ ID NO: 28), hirulog-1 D-Phe-Pro-Arg-Pro-(Gly)₄-Asn-Gly-Asp-Phe-Glu-Glu-Ile-Pro-Glu-Tyr-Leu (SEQ ID NO: 29), C-type natriuretic peptide (1-53) (CNP) (Asp-Leu-Arg-Val-Asp-Thr-Lys-Ser-Arg-Ala-Ala-Trp-Ala-Arg-Leu-Leu-Gln-Glu-His-Pro-Asn-Ala-Arg-Lys-Tyr-Lys-Gly-Ala-Asn-Lys-Lys-Gly-Leu-Ser-Lys-Gly-Cys-Phe-Gly-Leu-Lys-Leu-Asp-Arg-Ile-Gly-Ser-Met-Ser-Gly-Leu-Gly-Cys; Disulfide bridge: Cys37-Cys53) (SEQ ID NO: 30), "Mini ANP" (Met-Cys-His-cyclohexylAla-Gly-Gly-Arg-Met-Asp-Arg-Ile-Ser-Cys-Tyr-Arg, disulfide bridge cys2-cys13) (SEQ ID NO: 31), Melanotan-II (MT-II, alpha-MSH4-10-NH₂, or Ac-Nle4-Asp5-His6-D-Phe7-Arg8-Trp9-Lys10) (SEQ ID NO: 32), thymosin alpha1 (TA1) (Ac-Ser-Asp-Ala-Ala-Val-Asp-Thr-Ser-Ser-Glu-Ile-Thr-Thr-Lys-Asp-Leu-Lys-Glu-Lys-Lys-Glu-Val-Val-Glu-Glu-Ala-Glu-Asn) (SEQ ID NO: 33), Cys-Phe-Ile-Gln-Asn-Cys-Pro-Orn-Gly-NH₂, Disulfide bridge: Cys1-Cys6) (SEQ ID NO: 34), octreotide (201-995) (DPhe-Cys-Phe-DTrp-Lys-Thr-Cys-Thr-ol; disulfide bridge: Cys2-Cys7) (SEQ ID NO: 35), calcitonin gene-related peptide (CGRP) (Ala-Cys-Asp-Thr-Ala-Thr-Cys-Val-Thr-His-Arg-Leu-Ala-Gly-Leu-Leu-Ser-Arg-Ser-Gly-Gly-Val-Val-Lys-Asn-Asn-Phe-Val-Pro-Thr-Asn-Val-Gly-Ser-Lys-Ala-Phe-NH₂; Disulfide bridge: Cys2-Cys7) (SEQ ID NO: 36), endomorphin-1 Tyr-Pro-Trp-Phe-NH₂ (SEQ ID NO: 37); endomorphin-2 Tyr-Pro-Phe-Phe-NH₂ (SEQ ID NO: 38), nociceptin (also known as Orphanin FQ, Phe-Gly-Gly-Phe-Thr-Gly-Ala-Arg-Lys-Ser-Ala-Arg-Lys-Leu-Ala-Asn-Gln) (SEQ ID NO: 39), angiotensinogen (1-13) (Asp-Arg-Val-Tyr-Ile-His-Pro-Phe-His-Leu-Val-Ile-His) (SEQ ID NO: 40), adrenomodullin (1-12) (Tyr-Arg-Gln-Ser-Met-Asn-Asn-Phe-Gln-Gly-

Leu-Arg) (SEQ ID NO: 41), antiarrhythmic peptide (AAP) (Gly-Pro-Hyp-Gly-Ala-Gly) (SEQ ID NO: 42), Antagonist G (Arg-DTrp-(nMe)Phe-DTrp-Leu-Met-NH₂), indolicidin (Ile-Leu-Pro-Trp-Lys-Trp-Pro-Trp-Trp-Pro-Trp-Arg-Arg-NH₂) (SEQ ID NO: 43), osteocalcin (37-49) (Gly-Phe-Gln-Glu-Ala-Tyr-Arg-Arg-Phe-Tyr-Gly-Pro-Val) (SEQ ID NO: 44), cortistatin 29 (1-13) (Glp)-Glu-Arg-Pro-Pro-Leu-Gln-Gln-Pro-Pro-His-Arg-Asp) (SEQ ID NO: 45), cortistatin 14 Pro-Cys-Lys-Asn-Phe-Phe-Trp-Lys-Thr-Phe-Ser-Ser-Cys-Lys; Disulfide bridge: Cys2-Cys13 (SEQ ID NO: 46), PD-145065 (Ac-D-Bhg-Leu-Asp-Ile-Ile-Trp) (SEQ ID NO: 47), PD-142893 (Ac-D-Dip-Leu-Asp-Ile-Ile-Trp) (SEQ ID NO: 48), fibrinogen binding inhibitor peptide (His-His-Leu-Gly-Gly-Ala-Lys-Gln-Ala-Gly-Asp-Val) (SEQ ID NO: 49), leptin (93-105) (Asn-Val-Ile-Gln-Ile-Ser-Asn-Asp-Leu-Glu-Asn-Leu-Arg) (SEQ ID NO: 50), GR 83074 (Boc-Arg-Ala-DTrp-Phe-DPro-Pro-Nle-NH₂) (SEQ ID NO: 51) Tyr-W-MIF-1 (Tyr-Pro-Trp-Gly-NH₂) (SEQ ID NO: 52), parathyroid hormone related peptide (107-111) (Thr-Arg-Ser-Ala-Trp) (SEQ ID NO: 53), angiotensinogen (1-14) Asp-Arg-Val-Tyr-Ile-His-Pro-Phe-His-Leu-Val-Ile-His-Asn (SEQ ID NO: 54), and Leupeptin (Ac-Leu-Leu-Arg-CHO).

Claim 84. (New) A peptide conjugate according to claim 82 or 83, wherein Z consists of about 4 to about 15 amino acid units.

Claim 85. (New) A peptide conjugate according to claim 82 or 83, wherein each Xaa unit of Z is Glu, Lys or Met.

Claim 86. (New) A peptide conjugate according to claim 82 or 83, wherein Z is (Lys)_n, wherein n is an integer in the range from about 4 to about 15.

Claim 87. (New) A peptide conjugate according to claim 86, wherein Z is Lys₄ (SEQ ID NO: 55), Lys₅ (SEQ ID NO: 56) or Lys₆ (SEQ ID NO: 62).

Claim 88. (New) A peptide conjugate according to claim 87, wherein Z is Lys₆ (SEQ ID NO: 62).

Claim 89. (New) A peptide conjugate according to claim 82 or 83, wherein Z consists of L-amino acids only.

Claim 90. (New) A peptide conjugate represented by one of the following formulae:

H-Tyr-Ala-Asp-Ala-Ile-Phe-Thr-Asn-Ser-Tyr-Arg-Lys-Val-Leu-Gly-Gln-Leu-Ser-Ala-Arg-Lys-Leu-Leu-Gln-Asp-Ile-Met-Ser Arg-Gln-Gln-Gly-Glu-Ser-Asn-Gln-Glu-Arg-Gly-Ala-Arg-Ala-Arg-Leu-Lys₆-NH₂ (GHRH(1-44)(Human)-Lys₆-NH₂) (SEQ ID NO: 88);

H-Tyr-Ala-Asp-Ala-Ile-Phe-Thr-Asn-Ser-Tyr-Arg-Lys-Val-Leu-Gly-Gln-Leu-Ser-Ala-Arg-Lys-Leu-Leu-Gln-Asp-Ile-Met-Ser Arg-Gln-Gln-Gly-Glu-Ser-Asn-Gln-Glu-Arg-Gly-Ala-Arg-Ala-Arg-Leu-Glu₆-NH₂ (GHRH (1-44)(Human)-Glu₆-NH₂) (SEQ ID NO: 89);

H-Ser-Val-Ser-Glu-Ile-Gln-Leu-Met-His-Asn-Leu-Gly-Lys-His-Leu-Asn-Ser-Met-Glu-Arg-Val-Glu-Trp-Leu-Arg-Lys-Lys-Leu-Gln-Asp-Val-His-Asn-Phe-Lys₆-OH (PTH(1-34)(Human)-Lys₆-OH) (SEQ ID NO: 91);

H-His-Ala-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-Tyr-Leu-Glu-Gly-Gln-Ala-Ala-Lys-Glu-Phe-Ile-Ala-Trp-Leu-Val-Lys-Gly-Arg-Lys₆-OH (GLP-1-(7-36)(Human)-Lys₆-OH) (SEQ ID NO: 92);

H-Gly-Gly-Thr-Tyr-Ser-Cys(Acm)-His-Phe-Gly-Pro-Leu-Thr-Trp-Val-Cys(Acm)-Lys-Pro-Gln-Gly-Gly-Lys₆-OH (EMP-1-Lys₆-OH) (SEQ ID NO: 93) ;

H-Aib-His-2-D-Nal-D-Phe-Lys-(Lys)₆-NH₂ (GHRP-(Lys)₆-NH₂) (SEQ ID NO: 96);

H-Tyr-Gly-Gly-Phe-Leu-Lys-Lys-Glu-Glu-Glu-Lys-OH (Leu-enkephalin-Lys-Lys-Glu-Glu-Glu-Lys-OH) (SEQ ID NO: 97);

H-Tyr-Gly-Gly-Phe-Leu-Lys-Glu-Glu-Glu-Glu-Lys-OH (Leu-enkephalin-Lys-Glu-Glu-Glu-Glu-Lys-OH) (SEQ ID NO: 98);

H-Tyr-Gly-Gly-Phe-Leu-Lys-Glu-Glu-Glu-Glu-Lys-OH (Leu-enkephalin-(Lys-Glu)₃) (SEQ ID NO: 99);

H-Tyr-Gly-Gly-Phe-Leu-(Dpr)₆-OH (Leu-enkephalin-(Dpr)₆-OH) (SEQ ID NO: 100);

H-Tyr-Gly-Gly-Phe-Leu- Lys₆-OH (H-Leu-enkephalin-Lys₆) (SEQ ID NO: 11);

Glu-His-Trp-Ser-Tyr-Gly-Leu-Arg-Pro-Gly-(Lys)₆-OH (GnRH-Lys₆-OH) (SEQ ID NO: 103);

Glu-His-Trp-Ser-Tyr-Gly-Leu-Arg-Pro-Gly-(Lys-Glu)₃-OH (GnRH-(Lys-Glu)₃-OH) (SEQ ID NO: 104); and

H-Ser-Val-Ser-Glu-Ile-Gln-Leu-Met-His-Asn-Leu-Gly-Lys-His-Leu-Asn-Ser-Met-Glu-Arg-Val-Glu-Trp-Leu-Arg-Lys-Lys-Leu-Gln-Asp-Val-His-Asn-Phe-(Lys-Glu)₃-OH (PTH 1-34 human-(Lys-Glu)₃-OH) (SEQ ID NO: 105).

Claim 91. (New) A method for the preparation of a peptide conjugate (X-Z) as defined in claim 82 or 83, comprising the steps of:

a) coupling an N- α -protected amino acid or N- α -protected dipeptide in the carboxyl activated form, in the C-terminal activated form to an immobilised peptide sequence H-Z-SSM, thereby forming an immobilised N- α -protected peptide fragment,

b) removing the N- α -protecting group, thereby forming an immobilised peptide fragment having an unprotected N-terminal end,

c) coupling an additional N- α -protected amino acid in the carboxyl activated form, or an additional N- α -protected dipeptide in the C-terminal activated form to the N-terminal end of the immobilised peptide fragment, and repeating the removal/coupling step procedure in step b) and c) until the desired peptide sequence X is obtained, and then

d) cleaving off the peptide conjugate from the solid support material.

Claim 92. (New) A method for producing the peptide conjugate of claim 82 or 83, comprising

- a) introducing a nucleic acid sequence encoding said conjugate into a host cell;
- b) culturing said host cell for a time and under conditions effective to produce said peptide conjugate, and isolating said conjugate from the culture.

Claim 93. (New) A method for producing the peptide conjugate of claim 82 or 83, comprising

- a) culturing a recombinant host cell comprising a nucleic acid sequence encoding said conjugate under conditions permitting the production of said conjugate; and
- b) isolating said conjugate from the culture.

Claim 94. (New) The method according to claim 92, wherein the nucleic acid sequence encoding said conjugate is contained within a nucleic acid construct or a vector.

Claim 95. (New) The method according to claim 93, wherein the nucleic acid sequence encoding said conjugate is contained within a nucleic acid construct or a vector.

Claim 96. (New) A composition comprising a peptide conjugate according to claim 82 or 83, and a pharmaceutical acceptable carrier.

Claim 97. (New) The peptide conjugate of claim 82 or 83, wherein Z consists of about 4 to about 7 amino acid units.

Claim 98. (New) The peptide conjugate of claim 97, wherein Z consists of 6 amino acid units.

Claim 99. (New) The peptide conjugate of claim 82 or 83, wherein Z comprises at least five Lys amino acid units.

Claim 100. (New) The peptide conjugate of claim 99, wherein Z comprises six Lys amino acid units.

Claim 101. (New) The peptide conjugate according to claim 82 or 83, wherein Z is (Lys)_n in which n is an integer in the range from about 4 to 10.

Claim 102. (New) The peptide conjugate of claim 101, wherein n is an integer in the range from about 4 to 8 or about 4 to 6.

Claim 103. (New) The peptide conjugate of claim 82 or 83, wherein Z is (Dbu)_n or (Dpr)_n, wherein n is an integer such as in the range from 4 to 6.

Claim 104. (New) The peptide conjugate of claim 82 or 83, wherein Z is further defined by having a free acid, amide or ester group.

Claim 105. (New) A method of achieving binding between the conjugate of claim 82 or 83 and μ opioid receptors comprising administering to the subject in need thereof the conjugate for a time and under conditions effective to achieve binding between said conjugate and μ opioid receptors.

Claim 106. (New) A composition comprising a pharmaceutically acceptable carrier and a conjugate according to claim 82 or 83 in an amount effective to bind μ opioid receptors.

Claim 107. (New) A composition comprising a pharmaceutically acceptable carrier, and a conjugate according to claim 82 or 83 in an amount effective to stimulate erythropoiesis.

Claim 108. (New) A composition comprising a pharmaceutically acceptable carrier, and a conjugate according to claim 82 or 83 in an amount effective to induce retraction of osteoblasts.

Claim 109. (New) The peptide conjugate of claim 82 or 83, wherein the conjugate is represented by the following sequence: Ac-Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-Lys-Pro-Val-(Lys)₆-NH₂ (SEQ ID NO: 122) or a fragment thereof.

Claim 110. (New) The peptide conjugate of claim 82 or 83, wherein the ratio between the half-life of said peptide conjugate and the half-life of the corresponding pharmacologically active peptide sequence X, when treated with carboxypeptidase A or leucine aminopeptidase in about 50 mM phosphate buffer solution at about pH 7.4 at about 37°C or in serum or plasma is at least 2.

Claim 111. (New) The peptide conjugate of claim 110, wherein the ratio is at least about 5, 7, 9, or 10.